

We claim:

1. A method for making a hydrophilic ester polyurethane foam, comprising:

(a) forming a polyurethane foam by mixing together the following components:

(i) 100 parts by weight of an ester polyol;

(ii) from 20.0 to 62.0 parts by weight, based on 100 parts polyol, of an isocyanate, wherein the isocyanate index is 110 or less; and

(iii) from 1.0 to 3.0 parts by weight, based on 100 parts polyol, of a stabilizing surfactant; and

(b) treating the polyurethane foam in a caustic bath to form the hydrophilic ester polyurethane foam,

wherein the hydrophilic ester polyurethane foam has a water absorption rate of at least 20 pounds of water per square foot per minute.

2. The method of claim 1, wherein the polyester polyol has a hydroxyl number in the range of 20 to 150.

3. The method of claim 1, wherein the polyester polyol has a hydroxyl number in the range of 50 to 60.

4. The method of claim 1, wherein the isocyanate is selected from the group consisting of toluene diisocyanates, methylene diisocyanates, and mixtures of such isocyanates.

5. The method of claim 1, wherein the stabilizing surfactant is a silicone surfactant.

6. The method of claim 1, further comprising from 1.0 to 5.0 parts by weight, based on 100 parts polyol, of a blowing agent as a component.

7. The method of claim 6, wherein the blowing agent is water.

8. The method of claim 1, further comprising a catalyst selected from the group consisting of: gel catalysts and gas forming catalysts, and mixtures thereof.

9. The method of claim 1, further comprising from 0.5 to 2.0 parts of a blow catalyst and from 0 to 0.3 parts of a gel catalyst.

10. The method of claim 1, wherein at least 5.0 parts by weight of the ester polyol comprises a hydrophilic polyester polyol made from an adipic acid and a polyethylene glycol.

11. The method of claim 1, further comprising a double cell-forming additive as a component.

12. The method of claim 1, further comprising an antimicrobial additive as a component.

13. The method of claim 1, wherein the caustic bath is formed as a solution containing sodium hydroxide.

14. The method of claim 1, wherein the hydrophilic ester polyurethane foam has pore sizes in the range of 70 to 130 pores per linear inch.

15. The method of claim 1, wherein the hydrophilic ester polyurethane foam has pore sizes in the range of 70 to 100 pores per linear inch.

16. The method of claim 1, wherein the isocyanate index is 100 or less.

17. The method of claim 1, wherein the hydrophilic ester polyurethane foam has an instantaneous wet out.

18. The method of claim 1, wherein the hydrophilic ester polyurethane foam has a water absorption rate of at least 25 pounds of water per square foot per minute.

19. A hydrophilic ester polyurethane foam made according to the method of claim 1.